PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

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PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing (day/month/year)	01.09.2004
Applicant's or agent's file reference: DES/P33027	IMPORTANT NOTIFICATION

International application No.	International filing date (day/month/year)	Priority date (day/month/year)
PCT/EP 03/03661	07.04.2003	08.04.2002

Applicant
GLAXO GROUP LIMITED et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:

European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
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Form PCT/IPEA/416 (January 2004)

PATENT COOPERATION TREATY

 PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	**FOR FURTHER ACTION** See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
DES/P33027		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP 03/03661	07.04.2003	08.04.2002
International Patent Classification (IPC) or both national classification and IPC		
C07C65/28		
Applicant		
GLAXO GROUP LIMITED et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
24.10.2003	01.09.2004
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Delanghe, P Telephone No. +31 70 340-4119

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/03661

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-166 as originally filed

Claims, Numbers

1-16 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

   ☐ the entire international application,

   ☒ claims Nos. 10-12 (with respect to industrial applicability)

   because:

   ☒ the said international application, or the said claims Nos. 10-12 relate to the following subject matter which does not require an international preliminary examination (specify):

   see separate sheet

   ☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. are so unclear that no meaningful opinion could be formed *(specify)*:

   ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

   ☐ no international search report has been established for the said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

   ☐ the written form has not been furnished or does not comply with the Standard.

   ☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-16
	No:	Claims	
Inventive step (IS)	Yes:	Claims	6
	No:	Claims	1-5, 7-16
Industrial applicability (IA)	Yes:	Claims	1-9, 13-16
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claims 10-12 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i) PCT).

For the assessment of the present claims 10-12 on the question whether they are industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent on upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. **Document**
   Reference is made to the following documents:

   D1: WO 0119814 A
   D2: US-A-5 811 459

2. **Subject-matter**
   The present application discloses cyclopentene phenyloxy compound derivatives and its compositions to be used in medicine. The compounds are particularly used in the treatment of prostaglandin mediated diseases.

3. **Novelty**
   The document D1 discloses ((phenylmethoxy)phenyl)thienyl-phenyl derivatives and their use in the treatment of prostaglandin mediated diseases (examples 1-30 and claims 1-24). The subject-matter of claims 1-16 differs from the known compounds in D1 in that the thienyl ring in between the two phenyl rings is replaced by a cyclopentene moiety.

The document D2 discloses ((phenylmethoxy)phenyl)ethylaryl carboxylic acid, ((phenylmethoxy)phenyl)propylaryl carboxylic acid, ((phenylmethoxy)phenyl)ethenylaryl carboxylic acid derivatives and their use in the treatment of prostaglandin mediated diseases and other diseases (examples, compounds 1-49 and column 20, line 48 to column 21, line 38). The subject-mattter of claims 1-16 differs from the known compounds in D2 in that the ethyl, propyl of ethenyl linker in between the phenyl and aryl rings is replaced by a cyclopentene moiety.

Consequently, the subject-matter of the claims 1-16 is novel over D1 and D2 (Article 33(2) PCT).

4. **Inventive step**

The document D1 is regarded as being the closest prior art to the subject-matter of claims 1-16 (see above).
The problem to be solved by the present invention may therefore be regarded as the provision of further compounds suitable for the treatment of prostaglandin mediated diseases. The solution proposed in claim 6 of the present application is considered as involving an inventive step (Article 33(3) PCT because there is no suggestion in D1 that replacement of a thienyl group by a cyclopentene moiety would lead to compounds that are useful in the treatment of prostaglandin mediated diseases.

However, claims 1-5, 7-16 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The expression "pharmaceutically acceptable derivatives thereof" given in the abovementioned claims, especially in combination with the meaning of this term as described in the description, page 11, lines 18-20, "or any other compound ..... residue thereof.", is an attempt to define the subject-matter in terms of the result to be achieved (see also Guidelines C-III, 4.7). Such a formulation is not allowed because it appears possible to define the subject-matter in more concrete terms. Furthermore, pharmaceutically acceptable derivatives of the presently claimed compounds may well represent a completely separate invention from that disclosed in the present application and as such they are insufficiently disclosed according to Article 5 PCT, since the skilled person would not be able to produce all of these compounds without exercising an inventive step in accordance with Article 33(3) PCT.

Thus, the present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-5, 7-9 and 13-15 does not involve an inventive step in the sense of Article 33(3) PCT.

5. **Industrial applicability**
The compounds of the present application are useful in prostaglandin mediated diseases. For claims 10-12 see Section III above.

6. **Other remarks**
Claim 16 contains a reference to the examples in the description. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.

The prefix "3" has been omitted in claim 6, first compound and in the description, on page 26, heading of example 1.